National Institute of Environmental Health Sciences

# Potential impacts of climate variability on respiratory morbidity in children, infants, and adults

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**Abstract:**

OBJECTIVE: To determine whether climate variability influences the number of hospitalizations for respiratory diseases in infants, children, and adults in the city of Campo Grande, Brazil. METHODS: We used daily data on admissions for respiratory diseases, precipitation, air temperature, humidity, and wind speed for the 2004-2008 period. We calculated the thermal comfort index, effective temperature, and effective temperature with wind speed (wind-chill or heat index) using the meteorological data obtained. Generalized linear models, with Poisson multiple regression, were used in order to predict hospitalizations for respiratory disease. RESULTS: The variables studied were (collectively) found to show relatively high correlation coefficients in relation to hospital admission for pneumonia in children (R(2) Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 68.4%), infants (R(2) Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 71.8%), and adults (R(2) Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 81.8%). CONCLUSIONS: Our results indicate a quantitative risk for an increase in the number of hospitalizations of children, infants, and adults, according to the increase or decrease in temperature, humidity, precipitation, wind speed, and thermal comfort index in the city under study.

**Source:**
http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1806-37132012000600005&lng=pt&nrm=iso&tlng=en

## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Precipitation, Temperature

**Temperature:** Fluctuations

**Geographic Feature:**

resource focuses on specific type of geography

Urban

**Geographic Location:** ☑

resource focuses on specific location

Non-United States

**Non-United States:** Central/South America

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

**Respiratory Effect:** Bronchitis/Pneumonia

**Mitigation/Adaptation:** ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern:** A focus of content

**Population of Concern:** ☑

populations at particular risk or vulnerability to climate change impacts

Children

**Resource Type:** ☑

format or standard characteristic of resource

Research Article

**Timescale:** ☑

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content